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P A P E R S

IN

C H E M I S T R Y.

The SILVER MEDAL of the Society was this Session voted to H. B. WAY, Esq. of Bridport Harbour, for his Method of preparing a cheap and durable Stucco, or Plaster, for outside or inside Walls. The following Communications were received from him, and Specimens of the Stucco, and of the Sand from which it was made, are preserved in the Society's Repository.

SIR,

IN consequence of your expressing an opinion that a general knowledge of my method for preparing a stucco, or plaster, for outside walls of houses much exposed to sea breezes or bad weather, would be of service to the public, I have inclosed an account of the process, and I will with pleasure furnish any further particulars of this business for the Society of Arts, or permit any gentleman to examine it who

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may

may wish for more information on the subject. You know the situation of my house, which is greatly exposed to the spray of the sea and bad weather ; and I can truly add, that by means of this stucco it is perfectly free from damp, and the plaster remains compact and durable.

I remain, Sir,

Your obedient humble servant,

H. B. WAY.

Bridport Harbour, Oct. 12, 1810.

TO C. TAYLOR, M.D. SEC.

To make a strong Stucco, or Mortar.

Three parts Bridport Harbour-sand to one of lime, both finely sifted, and mixed with lime-water; if used as stucco, the first coat to be laid on half the thickness of a crown-piece; let it remain two days, then with a painter's brush wash it over with strong lime-water, and lay on the second coat of the same thickness.

1805, March 25.—Measured a coal half-bushel of Bea-mister lime, and put it into a hogshead of water, to make the lime-water.—Measured two coal half-bushels more of the lime, slacked and sifted it, it then measured three half-bushels, to which were added nine coal half-bushels of Bridport Harbour-sand well sifted; I saw it well mixed up with lime-water, and thoroughly worked together; the next day saw it turned, and again mixed up, that it might be well incorporated together.

27th.—This morning had a fine coat of it laid on the west end of my large storehouse at Bridport Harbour.

29th.

29th.—Had it washed with lime-water, and a second coat laid on.

Cost.

	<i>s.</i>	<i>d.</i>
One sack and a quarter of lime, at 2 <i>s.</i> 6 <i>d.</i> -	3	1½
Two men and one boy two days each, fetching and mixing up materials, and laying on; men 2 <i>s.</i> 3 <i>d.</i> per day, boy 10 <i>d.</i> per day, and one pint of ale each per day, 12 <i>d.</i> - - -	11	10½
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	15	0

N. B.—I suppose the expence rather over than under-rated.

May 11.—This day Thomas Everett measured and examined the work, found it hard and sound, $24\frac{7}{9}$ square yards, a little done to the house, suppose the whole to be twenty-five yards square.

Twenty-five square yards at $7\frac{1}{4}$ *d.* per square yard, would be 15*s.* $1\frac{1}{4}$ *d.*

June 13, 1806.—Examined the work, which was perfectly sound and free from cracks, nothing having ever peeled off from it. The situation exposed to the weather in the greatest degree.

N. B.—The coal half-bushel above-mentioned holds exactly thirteen gallons wine-measure.

H. B. WAY.

SIR,

I was favoured with yours of the 18th instant, and I now enclose the mason's certificate of the quantity of stucco done with the composition I gave him the particulars of, in addition to which it may be necessary to mention that the coal half-bushel, with which the ingredients of the composition were measured, (according to the account formerly given,) contains exactly thirteen gallons of water, wine measure, and would hold exactly 1 cwt. 1 qr. 7 lb. net of the sand used; the weight of the lime I do not know, and my being able to ascertain exactly the weight of the sand, arose from my waggon being employed to carry what was used at Yeovil and East Coker, from hence and for what I sent to Yeovil, I was paid 1 s. 9 d. per cwt. ; from the sand here succeeding so well, Thomas Everett would not be prevailed on to engage to do any of that sort of work with hill or river sand, to be got on this shore. The work he did for me was all by the day; what he did at Yeovil and East Coker he agreed for at eight pence per yard, of nine feet superficial measure for labour only for the two coats, at four pence per square yard for one coat, all the materials being brought to the spot at his employer's expence, and who also found scaffolding and scaffold ropes; this, I think, is considerably higher than by my calculation of the expence of what I had first done he ought to have charged; but its being done at a distance of twenty miles from where he lives, and in the most busy time of the year for masons work, I suppose must account for it in the first instance, and having once made that price, he would not now work under; but I believe, for a considerable building, and with sufficient notice, and being allowed 6 d. per mile in lieu of wages and travelling expences for himself

self and an assistant, out and home, he would go to any part of the kingdom, on being paid 8 *d.* per yard for the work. It has been the general received opinion here, that plaster made with sea sand, unless well washed in fresh water, would be always damp, but, on the contrary, I find from what has been done in my dining-parlour and passage, it has been always quite dry, although the whole of the sand with which it has been done has been thrown up by the sea, and must have been always at spring tides covered with sea water; indeed, it sometimes happens that, for months together, there is none to be collected on our shores at this place, that Everett thinks fine enough for the purpose, and as I am now and then applied to for getting it, I have lately, when my horses were at leisure, got a small quantity collected and hauled in for my own use, or, in case of its being wanted, I charge 2 *d.* per cwt. for it, where it is deposited. As I design at some future time to make some alteration in the passage done with the stucco in April 1806, I had four pieces taken off, which I tied up separately, each in a piece of brown paper, and had them packed in a box, with a layer of sand between each piece, and at the bottom and top of the box, and directed it for you, and sent it with some goods I shipped on Saturday last to my friend Netlam Giles, Esq. No. 2, New Inn, St. Clements. I have requested of him that he will have the goodness on its arrival to forward it to you. The vessel it goes by is the sloop Mary Anne, John Anning, master, bound to Dounes Wharf, Hermitage, Wapping. It is possible that the pieces of stucco sent may imbed some of the saline particles from the sand it was packed in, but this did not occur to me at the time, or they should have been packed in saw-dust, as they were perfectly dry when packed, so much so as, when struck upon with the knuckle, to give a sound similar to what an earthen vessel would do if dry and not

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cracked.

cracked. Should there be any further information requisite, on your letting me know, it shall immediately be sent you. It had almost escaped me to say, that the small quantity of six yards, done last October with stone lime for trial, was done from your intimating to me, when I had the pleasure of seeing you in Dorsetshire, that stone lime was likely to answer ; but it would I think look better if white-washed ; the difference in point of expence is materially in favour of the stone lime. The cost of my waggon-load of it at the kiln, about a mile from hence, would be only 10 s., whereas about the same quantity of chalk-lime at the kiln, full eight miles from hence, would cost 1 l. 4 s., and I cannot get any chalk-lime nearer. I have only now to add that I am, very respectfully,

Sir,

Your obedient humble servant,

H. B. WAY.

Bridport Harbour, April 22, 1811.

To C. TAYLOR, M. D. SEC:

CERTIFICATE.

I hereby certify, that Mr. H. B. Way, merchant, of Bridport Harbour, in the county of Dorset, in the month of March 1805, gave me the necessary directions for making a strong cheap stucco or plaster, which was composed of one part chalk lime, and three equal parts of fine sand, collected on the sea shore, near Bridport Harbour, the whole of which was mixed up to a proper consistence with a strong lime water, and I have since that time done the annexed work with the said composition.

Date

Date.	For Mr. H. B. WAY, at Bridport Harbour.	Yards.	Yards Flat Measure.
1805. March.	On the outside of a warehouse wall, part rough stone and part brick.	25	
1806. April.	On the inside walls of a passage in his dwelling-house, on rough stone.	10	
October and November.	On the inside rough stone walls of two cellars.	224	
	One coat on the ceilings of the said cellars.	228	
	N. B. The first coat on the ceilings was common hair mortar.		
1807. April and May.	The whole of the outside of his dwelling-house, rough stone walls.	335	
August.	On one side wall of the dining-room in brick; this stucco was rubbed down quite smooth, and has since been painted with oil colours.	13	
1810. October 10.	On a rough stone wall of a warehouse directly fronting the sea, and not two hundred yards from it, with common stone-lime, such as is used for manure in this quarter by way of trial.	6	
1811. April.	At Mr. H. B. Way's request, I have this day carefully examined the whole of the above work, and I find it sound and good, and by his directions, four pieces of the stucco were taken off from the passage wall, (which was laid on April 1806,) and packed in the same sort of sand as is used in the composition, and sent by him directed for the Secretary of the Society of Arts, Manufactures and Commerce, London.		821
	For PETER DANIEL, Esq. of Yeovil, Somersetshire.		
1808. May and June.	On the outside brick-walls of his dwelling-house there.	430	
1810. May and June.	On the outside brick-walls of other dwelling-houses there, for W. Hellyer, Esq. of East Coke, near Yeovil.	480	
1809. June.	On the outside brick and rough stone-walls of his dwelling-house, at that place.		910
			1040
	For the Rev. JOSEPH FAWCETT, of Yeovil.		
1810. June.	On the outside rough stone-walls of his dwelling-house there.		212
	N. B. Mr. Fawcett's house being built the year before, with a view to being stuccoed, the walls were left rough.		
		Yards.	2983

I hereby certify, that the whole of the foregoing two thousand nine hundred and eighty-three square yards of stucco, were done with the before-mentioned composition, by me and my men under my directions, and I verily believe it is the cheapest stucco known, and that it will prove very durable, both without doors and within, and that it has given entire satisfaction to the gentlemen who have tried it; and I am now engaged, if I can the ensuing summer, to stucco the outside of one house at Bridport, and another at Yeovil, also the inside of a cottage for labourers that I have just built for Mr. H. B. Way, at Bridport harbour.

THOMAS EVERETT.

Stone Mason, Bricklayer and Plasterer.

Shipton George, near Bridport,

Dorset, April 22, 1811.

Witness, JAMES BUDDEN.